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Abstract

Research demonstrates that college is a stressful time of life, especially for student-athletes who are involved in both athletics and academics (Lopes Dos Santos et al., 2020). While research exists that proposes strategies for helping either students or athletes cope with the stress that they face, very little research specifically addresses the needs of student-athletes. The purpose of this study was to determine effective ways in which coaches can mitigate stress for student-athletes at faith-based universities. Through a measurement of the anxiety and depression levels that student-athletes at Dordt University experience, correlations were made between exhaustion levels, a reduced sense of accomplishment, and sport devaluation of 125 athletes on campus. Coaches were then interviewed to determine their awareness of student-athletes stress as well as mitigation strategies they have implemented. This study found that the primary way in which coaches at this faith-based institution attempt to help their student-athletes cope with stress is by focusing on the coach-athlete relationship.

Document Type

Thesis

Degree Name

Master of Education (MEd)

Department

Graduate Education

First Advisor

Patricia C. Kornelis

Keywords

stress management, college athletes, coaches, life skills, fatigue, coach-athlete relationships

Subject Categories

Curriculum and Instruction | Education

Comments

Action Research Report Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Education

Stress Management for Student-Athletes: Stress Levels and Mitigation Strategies for Athletes
and Coaches at a Faith-based University

by

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B.S. Dordt College, 2019

Action Research Report
Submitted in Partial Fulfillment
of the Requirements for the
Degree of Master of Education

Department of Education
Dordt University
Sioux Center, Iowa
April 2021

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Abstract

Research demonstrates that college is a stressful time of life, especially for student-athletes who are involved in both athletics and academics (Lopes Dos Santos et al., 2020). While research exists that proposes strategies for helping either students or athletes cope with the stress that they face, very little research specifically addresses the needs of student-athletes. The purpose of this study was to determine effective ways in which coaches can mitigate stress for student-athletes at faith-based universities. Through a measurement of the anxiety and depression levels that student-athletes at Dordt University experience, correlations were made between exhaustion levels, a reduced sense of accomplishment, and sport devaluation of 125 athletes on campus. Coaches were then interviewed to determine their awareness of student-athletes stress as well as mitigation strategies they have implemented. This study found that the primary way in which coaches at this faith-based institution attempt to help their student-athletes cope with stress is by focusing on the coach-athlete relationship.

Many college students struggle with some type of anxiety or stress during their time as undergraduates. According to the American College Health Association (2018), 63% of college students report struggling with overwhelming anxiety, while 23% report being diagnosed or treated by a medical professional for anxiety. These numbers are staggeringly high and reflect the many pressures that college students face in the United States.

For students who are involved in college athletics, the likelihood of facing stress and anxiety is further increased (Lopes Dos Santos et al., 2020). This increase in stress for student-athletes is often attributed to a heavy training load, balancing athletics and academics, and stressors related to athletic performance. According to Cross and Fouke (2019), “In U.S. higher education, there is a greater emphasis being placed on the athletic abilities of student-athletes and the success of their teams, rather than their success in the classroom” (p. 3). In fact, this conflict between academics and athletics is one of the most significant stressors for student-athletes. Many student-athletes have reported that success in one pursuit comes at the expense of another, with athletes more frequently sacrificing educational pursuits for the sake of athletic performances and priorities (Jennings et al. 2018). Because of the stress that student-athletes face when it comes to the tensions between athletics and academics, it is crucial that healthy coping mechanisms are established to help student-athletes mitigate their stress.

While a significant amount of research confirms the existence of and prevalence of anxiety and stress among student-athletes at the collegiate level, very little research has been done on mitigation strategies for stress that specifically target student-athletes. Various studies have concluded that mindfulness programs have had a positive impact on diminishing the effect of stress for students and/or athletes (Gallego et al., 2015). Nevertheless, these studies fail to

specifically address student-athletes in their analysis, often focusing specifically on either students or elite-level athletes. Furthermore, an even smaller portion of research addresses the role of coaches and institutions themselves at helping student-athletes overcome the anxiety that accompanies both academics and athletics.

Dordt University is a small, liberal arts university located in Sioux Center, IA. Dordt's athletic department consists of eight varsity men's teams as well as eight women's teams. A significant number of students on campus participate in athletics, totaling approximately 33 percent of the entire student body. Dordt is a faith-based institution that seeks to incorporate a Reformed Christian perspective into all areas of academics and athletics. The athletic department at Dordt has adopted "The Defender Way" as a cohesive summary of the commitments of the department and its approach to competitive athletics. The four points of The Defender Way are as follows: "We are committed to the Great Commission and cultural mandate. We are committed to equipping student-athletes to be servant leaders. We are committed to the academic development of all student-athletes. We are committed to the pursuit of championships" (Dordt University, 2020). This study sought to determine if Dordt University follows national trends regarding student-athlete stress and anxiety, and what measures coaches are taking to help mitigate the effects of said stress.

Purpose of the Study

The purpose of this study was to determine effective ways in which coaches can mitigate stress for student-athletes at faith-based universities. Through a measurement of the stress levels that student-athletes at Dordt University experience, the researcher hoped to identify common stressors and factors that may contribute to stress for student-athletes. Similarly, by comparing stress levels of student-athletes across various sports, the researcher hoped to identify effective

strategies that coaches have implemented in their respective programs to help diminish the stress that their student-athletes experience.

Research Questions

Given the above purpose of this study, the following questions were addressed:

1. What are the current levels of stress that student-athletes experience?
2. What factors contribute most to the stress that student-athletes experience?
3. How do stress levels compare across sport, gender, and grade level?
4. What strategies are currently in place to help mitigate stress for student-athletes?
5. How aware are collegiate coaches of the stress that their student-athletes face?
6. What strategies can be implemented to mitigate the stress that student-athletes face?

Definitions

The following definitions will be used for the purpose of this study and, unless otherwise noted, are the definitions of the author.

Attribution theory: motivation treatments that focus on encouraging students and athletes to ascribe failure to unstable and controllable causes (i.e., poor study habits, lack of effort) (Parker et al., 2018)

Coping: any behavior intended to manage stress (Moeller et al., 2020)

Mindfulness: “the ability to draw attention to the experiences that occur in the present moment, in a particular way, accepting them without judgement” (Gallego et al., 2014).

Mindfulness-based student training (MBST): an intervention program adapted from mindfulness-based stress reduction elements to suit the normal daily needs of university students (Voss et al., 2020)

Reduced sense of accomplishment: “feelings of inefficacy and a tendency to evaluate oneself negatively in terms of sport performance and accomplishments” (Isoard-Gauthier et al., 2018)

Stressor: an event or environment that an individual may consider demanding, challenging, or stress-inducing.

Student-athlete: collegiate students formally involved in team sports (Cross & Fouke, 2019)

Literature Review

The effects that psychological stress have on an athlete’s performance (at all ages and levels of competition) has been widely researched and discussed in scientific literature (Hamlin et al., 2019; Lipka, 2006). While physical stressors can play a significant role in how well an athlete is able to compete, psychological stressors also can significantly impact an athlete’s ability to perform. Some of the main stressors, both physical and psychological, for athletes include their performance and the outcomes of competitions (Nicholls et al., 2016). Hamlin et al. (2019) similarly stated that “young athletes experience the highest stress when they perform poorly, make mistakes, and when they perceive pressure from parents, coaches, and teammates” (p. 2). This stress can have a negative effect on an athlete’s physical state, increasing the risk of injury, the development of acute illness, and overtraining or burnout (Hamlin et al., 2019). In addition to the adverse physical effects of stress on an athlete, stress can also create an unhealthy mental state for athletes, increasing the risk for the development of anxiety or depression-related illnesses (Lopes Dos Santos et al., 2020). Finally, a coach’s behavior and interactions with athletes can also be an added stressor for an athlete (Nicholls et al., 2016).

While those who compete in athletics are subjected to a significant number of stressors, for student-athletes, the number of stressors is greatly increased. According to Hamlin et al.

(2019), “Athletes who are also involved in university study are very prone to study-related stressors such as coursework demands, study/life balance, and financial strain” (p. 2). In addition to the stress of practices and competitions (i.e., physical fatigue), students face additional unique stressors such as practice and competitions scheduling conflicts, new coaching and training environments, student-sport identity issues, and negative perceptions from faculty and peers (Parker et al., 2018). The number of individuals who face stress as collegiate student-athletes is larger than one might think. According to the NCAA, approximately five to six percent of the eight million high school scholar-athletes will play collegiate sports. While this percentage may appear small, it characterizes approximately 400,000 to 500,000 young adults who play college sports (Cross & Fouke, 2019). For many Americans, the mental toll on our student-athletes is a significant concern. According to surveys conducted, “three in four Americans worry that the big business of collegiate athletics clashes with educational values, negatively affecting the athletes” (Lipka, 2006, p. 1).

This “business model” of college athletics—in which student-athletes are recruited and paid to compete to afford higher education—is not a minor concern. Many student-athletes have reported feeling pressured to prioritize sports over academics. In many ways, “the current higher education system still largely perceives academics and athletics as polarized, unequal, and separate entities” (Cross & Fouke, 2019, p. 2). Many student-athletes have felt pressured to choose athletics over academic performance, even regarding their choice of a major. Factors that influence choice of major for many collegiate athletes include class workload, daily homework, team practice times, competitions schedules, travelling for athletics, social life, and family (Cross & Fouke, 2019). As student-athletes struggle to juggle the various responsibilities that come with being both a student and an athlete, they report that academic requirements are the most

significant source of their stress. However, this is often due not to the academic stress itself, but to the time management that is required to balance academics and athletics (Lopes Dos Santos et al., 2020).

Due to the stressors that many student-athletes face, a large number turn to various coping mechanisms to manage their stress. Coping mechanisms are defined as behaviors intended to manage stress (Moeller et al., 2020). For some athletes, diet is a way to cope with stress. The competitive environment of athletics leads to the development of eating disorders for many athletes, males and females alike (Defeciani, 2015). The transition from high school to college for athletes places an added pressure and expectation to excel in their respective sports, leading to a higher rate of eating disorders among athletes than the general population (Defeciani, 2015).

Coinciding with an increase in eating disorders is an increase in number of athletes who experience mood disorders compared to non-athletes (Shannon et al., 2019). Even though athletes are more susceptible to mood disorders compared to their non-athlete counterparts, “stigma may be higher among athletes compared to non-athlete peers. Stigma, coupled with a culture that emphasizes toughness and the minimization of perceived weakness may contribute, in part, to under-recognition of mental illness in the athletic population” (Uphill et al., 2016, p. 2).

An added consequence to the stress load faced by student-athletes is a reduction in the amount of sleep each student-athlete receives each night. According to Taylor et al., (2016), “Empirical evidence demonstrates that reduced sleep negatively influences athletic/academic performance and various indices of morbidity” (p. 2). This decreased performance in both athletics and academics can have a snowball effect on the psychological stress that many athletes

face, as a decrease in athletic and academic performance can further compound the effects of stress.

In athletes and non-athletes alike, “high levels of stress cause different alteration in students, such as deficits in attention and concentration, difficulty memorizing and solving problems, low productivity and poor academic performance” (Gallego et al., 2014). To mitigate the effects of this stress, a variety of techniques and treatments have been researched and proposed in the literature. One such technique is that of mindfulness. For many athletes, mindfulness has been shown to be an effective technique for minimizing the effects of stress as it has been shown to decrease cortisol levels. The findings of Moeller et al. (2020) “suggest that students who report higher levels of mindfulness appear to be better adjusted across several domains of functioning. As such, efforts to foster mindfulness in college students may support well-being and protect emerging adults from the potentially harmful effects of stress” (p. 7).

Similar research has demonstrated that MBST is an effective method of reducing stress in students and student-athletes by incorporating elements of students’ lives. According to Voss et al. (2020), MBST has been shown to have a measurable and positive impact on students’ health regarding physiological data (i.e., HRV & BP). One reason that mindfulness interventions are successful in mitigating stress is the fact that engaging with mindfulness helps athletes foster perceptions of competence in mental health self-management, which is beneficial in stress regulation and well-being (Shannon et al., 2019). In a similar manner of coping with stress, student-athletes must appraise what their level of control is over their circumstances and sort their level of control into three categories: that which is controllable-by-self, controllable-by-others, and uncontrollable-by-anyone (Nicholls et al. 2016). A related vein of thought, attribution-theory, posits that motivation may be an effective way to ensure success for student-

athletes by encouraging them to take responsibility for the stress-inducing factors that they can control (Parker et al., 2018). By helping students shift attributions in both academics and athletics, high-stress student-athletes are more likely to feel in control when confronted with stressful circumstances, which also motivates them to perform better (Parker et al., 2018).

Coaches and professors alike must aid student-athletes in recognizing ways in which they can manage the stress in their lives. For example, viewpoints must be instilled in athletes such as that all athletes are scholars, athletes should pursue academics above athletics, athletics are only one facet of an athlete's identity, and athletes must see themselves as active participants in the academic process (Cross & Fouke, 2019). In this way, athletes can gain a broader perspective in their role as both a student and an athlete, as they will be able to understand aspects of their roles that they are able to control. Similarly, coaches must interact with athletes in a way that athletes perceive as being positive or supportive (Nicholls et al., 2016). Because the athlete/coach relationship is so important to student-athletes and can have such an important impact on their stress levels and mental health, coaches must be aware of how their interactions with athletes can both positively and negatively affect their self-image and psychological stress levels. Ultimately, professors and coaches alike must come alongside student-athletes to help them recognize their potential as they balance the stresses of both academics and athletics.

Methods

Participants

The research participants in this study were a group of 125 students from all years (freshman, sophomore, junior, and senior) and their respective coaches from Dordt University. All the individuals in this study participated in one or more varsity sports at the collegiate level. Participants included 49 male students and 75 female students. Athletes were also categorized by

their gender, grade-level, academic major, and in-season/out-of-season status. The students involved in this research study made up approximately 33 percent of the total student-athlete population of the university.

Materials

A survey was given to student-athletes who consented to be a part of the study. The survey was composed of statements from the Hospital Anxiety and Depression Scale (HADS) as well as the Athlete Burnout Scale (ABO-S) (Isoard-Gautheur et al., 2018). (see Appendix A) Various studies have demonstrated these scales to be accurate predictors of anxiety and depression as well as the risk of athlete burnout (Isoard-Gautheur et al., 2018). Follow-up interviews consisting of open-ended questions with the coaches of the participating athletes' sport teams were also conducted (see Appendix B). These interviews were used to address issues regarding coaches' knowledge of stress and anxiety among student athletes as well stress management and mitigation techniques implemented by the respective coaches.

Design

This study was a mixed-method research design. The first portion consisted of quantitative data regarding student-athlete stress and anxiety at Dordt University. This portion of the research included a survey that quantified the independent variables of both the levels of anxiety and burnout for student athletes using the scales provided in both the HADS and ABO-S. The subsequent interviews with coaches consisted of qualitative data collected and coded throughout the interviews. This data was used to determine the dependent variables relating to sport and mitigation strategies implemented by the coaching staff of various programs.

Procedure

During the first week of the study, an email was sent to all the head coaches at the local faith-based university. Coaches were asked if they and their athletes would be willing to participate in the study. Within a week, the coaches who consented to be a part of the study were sent an email with a link to the survey for their student-athletes. The coaches were asked to forward the email with link to the survey and study description to their student-athletes. Athletes who agreed to participate in the study were given a week to fill out the survey before a follow-up email was sent to them. An additional week was given to ensure sufficient time for athlete-response.

Once the athletes' anonymous responses had been collected, the data was analyzed and used to determine the level of anxiety and depression as well as predicted burnout rate among the various sports. Other information collected and taken into consideration when analyzing the data included athlete gender, grade-level, academic major, and in-season/out-of-season status. Data collected from the student-athlete responses was analyzed to determine correlations between variables.

Based on the data collected from the survey for student-athletes, a follow-up interview was designed and conducted with the respective head coaches from various teams (see Appendix B). These coaches had previously consented to being interviewed and to allowing their team to participate in the study. During these interviews, the coaches were given no initial knowledge of the data or results collected from the initial survey with their athletes. The purpose of these interviews was to gauge the level of knowledge these coaches had regarding the levels of stress, anxiety, and burnout on their varsity teams. Similarly, these interviews sought to address intentional or unintentional mitigation strategies used by the coaches to eliminate stress on their

teams. The interviews with the coaches were recorded and later transcribed. The data from these transcribed interviews was coded and then used as a predictor for athlete stress and burnout. A final analysis and interpretation of the finding was conducted utilizing the data from both the surveys as well as the coaches' interviews. To protect both coach and athlete anonymity, the interviews with coaches were destroyed once the data had been collected, coded, and analyzed.

Results

Quantitative: Student-Athlete Survey

To assess the levels of stress, anxiety, and depression among student-athletes as well as their levels of exhaustion, reduced sense of accomplishment, and sport devaluation, an initial survey consisting of three parts was sent to students-athletes. The first part contained questions relating to biographical information (gender, sport, year in school, academic major, and in-season status). The second part was taken from the Hospital Anxiety and Depression Scale (HADS) (Appendix A), and the third part took the form of the Athlete Burnout Scale (ABOS). Table 1 summarizes the average response per a rating scale of 0 to 3 of all student athletes to the questions from both the HADS and ABOS.

Student-athlete responses taken from the HADS were used to determine levels of anxiety and depression based on a total possible score of 21 for each category. A score of 0 to 7 indicates normal levels of anxiety or depression; a score of 8 to 10 indicates borderline abnormal levels of anxiety or depression; and a score of 11 to 21 indicates abnormal levels of anxiety or depression. A score for anxiety and depression was determined for each athlete based upon their responses, and athletes were placed into one of the aforementioned categories (normal, borderline, abnormal).

Table 1*Average Response of Student-Athletes Per Rating Scale Question*

Question:	Average Response:
I feel tense or "wound up"	1.49
I still enjoy the things I used to	0.74
I get a sort of frightened feeling as if something awful is about to happen	0.94
I can laugh and see the funny side of things	0.54
Worrying thoughts go through my mind:	1.55
I feel cheerful	0.87
I can sit at ease and feel relaxed	1.16
I feel as if I am slowed down	0.93
I get a sort of frightened feeling like "butterflies" in the stomach	1.28
I have lost interest in my appearance:	0.72
I feel more restless as I have to be on the move:	1.26
I look forward with enjoyment to things	0.71
I get sudden feelings of panic	0.94
I can enjoy a good book, podcast or TV show	0.82
I am not performing up to my abilities	1.32
I feel that my "batteries are flat"	1.15
I feel exasperated	0.85
Efforts I provide would be better used doing something else	0.68
I am unable to achieve good performances	0.83
I lack energy	1.25
I feel wearied	1.11
My performances leave me indifferent	0.88
I feel incompetent	0.79
I feel physically drained	1.25
I feel frazzled	0.75
I do not really care about my performances	0.30
I feel successful	1.67
I feel physically exhausted	1.44
I hardly think quickly	0.67
I have negative feelings toward my sport	0.69
It seems to me that whatever I do, I'm failing	0.82
I feel physically weak	0.79
I find it hard to concentrate	1.10
I feel loathing toward my sport	0.40

Similarly, student-athlete responses to the ABOS questions were used to categorize student-athlete levels of exhaustion, reduced sense of accomplishment, and sport devaluation. Due to the nature of the questions and the differing number of questions that fell into each category, student levels of exhaustion, reduced sense of accomplishment, and sport devaluation are represented as percentages. Table 2 depicts the averages for each category based upon gender.

Table 2

Gender Differences for Anxiety, Depression, Exhaustion, Reduced Sense of Accomplishment (RSOA), and Sport Devaluation.

AVERAGES BY GENDER		
Category	Women	Men
Anxiety	9.29	7.61
Depression	4.97	5.88
Exhaustion	0.34	0.35
RSOA	0.19	0.15
Sport Devaluation	0.20	0.19

Tables 3 show the levels of anxiety, depression, exhaustion, RSOA, and sport devaluation in relation to each individual sport.

Table 3

Levels of Anxiety, Depression, Exhaustion, Reduced Sense of Accomplishment (RSOA), and Sport Devaluation for Each Sport.

Sport	Anxiety	Depression	Exhaustion	Reduced Sense of Accomplishment	Sport Devaluation
M Track	6.31	4.69	0.26	0.09	0.14
M Soccer	6.63	6.5	0.38	0.13	0.14
M Volleyball	7	5.89	0.3	0.23	0.24
Dance	7.29	3.86	0.3	0	0.13
M XC	7.67	6.14	0.37	0.18	0.15
W Track	8	5	0.37	0.16	0.16
W Basketball	9.25	3.92	0.33	0.09	0.21
W Volleyball	9.53	5.27	0.3	0.27	0.28
Football	9.92	6.46	0.45	0.16	0.26
W XC	10.38	6.23	0.36	0.26	0.16
W Soccer	11	4.91	0.39	0.29	0.22

Table 4 depicts correlational data for all student-athletes based upon their biographical responses as well as their scores for anxiety, depression, exhaustion, reduced sense of accomplishment, and sport devaluation (Note: anxiety and depression data are based upon each individual's score (0 to 21) rather than their category (normal, borderline, abnormal)).

Table 4

Correlational Data for All Student-Athletes for a Variety of Categories.

CORRELATION								
	<i>Sport</i>	<i>Major</i>	<i>Gender</i>	<i>Anxiety</i>	<i>Depression</i>	<i>Exhaustion</i>	<i>RSOA</i>	<i>Sport Devaluation</i>
Sport	1.00							
Major	-0.06	1.00						
Gender	-0.22	0.03	1.00					
Anxiety	0.03	0.02	-0.18	1.00				
Depression	-0.14	-0.07	0.14	0.60	1.00			
Exhaustion	-0.06	-0.04	0.00	0.74	0.62	1.00		
RSOA	0.05	0.00	-0.07	0.55	0.45	0.61	1.00	
Sport Devaluation	0.14	-0.11	-0.03	0.34	0.33	0.44	0.61	1

Figures 1 through 9 depict correlations between variables. Figure 1 shows differences in anxiety levels between genders, where anxiety is represented as a scalar quantity (from 0 to 21). The difference in means for this correlation has a p -value of 0.049, indicating a significant difference between both genders regarding anxiety levels.

Figure 1

Correlation of Gender and Anxiety Among All Student-Athletes (Females: 0; Males: 1)

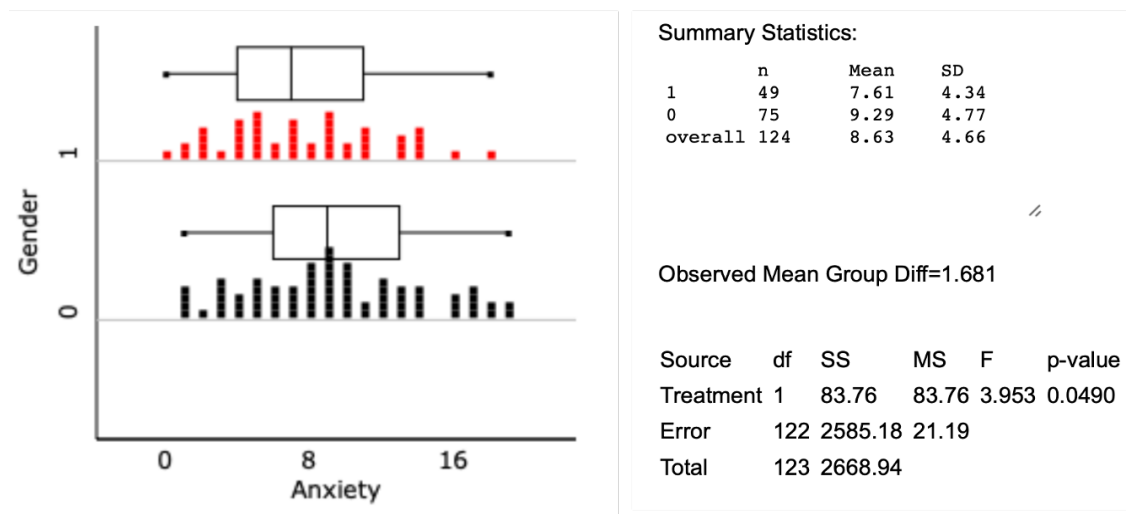


Figure 2 is a representation of the correlation between anxiety and depression for all student-athletes. Anxiety is represented as a categorical variable (normal: 0, borderline: 1, and abnormal: 2) while depression is scalar (from 0 to 21). The difference in means for this correlation has a p -value of 0.00, indicating a significant difference between anxiety groups regarding depression levels.

Figure 2

Correlation of Anxiety and Depression Among All Student-Athletes.

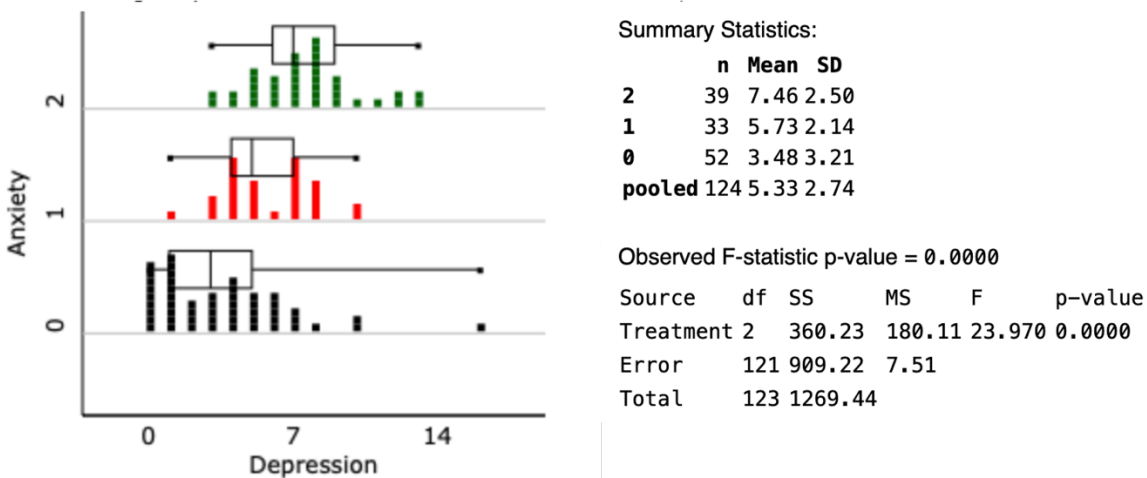


Figure 3 is a representation of the correlation between anxiety and exhaustion for all student-athletes. Anxiety is represented as a categorical variable (normal: 0, borderline: 1, and abnormal: 2) while exhaustion is represented as a percentage. The difference in means for this correlation has a p -value of 0.00, indicating a significant difference between anxiety groups regarding exhaustion levels.

Figure 3

Correlation of Anxiety and Exhaustion Among All Student-Athletes.

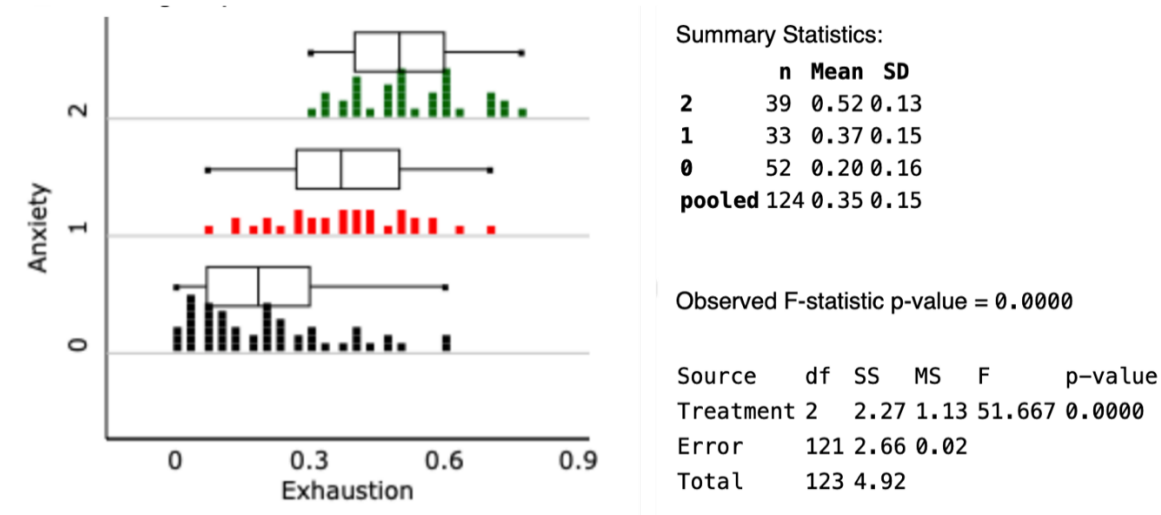


Figure 4 is a representation of the correlation between anxiety and reduced sense of accomplishment (RSOA) for all student-athletes. Anxiety is represented as a categorical variable (normal: 0, borderline: 1, and abnormal: 2) while RSOA is represented as a percentage. The difference in means for this correlation has a p -value of 0.00, indicating a significant difference between anxiety groups regarding a reduced sense of accomplishment for student-athletes.

Figure 4

Correlation of Anxiety and a Reduced Sense of Accomplishment Among All Student-Athletes.

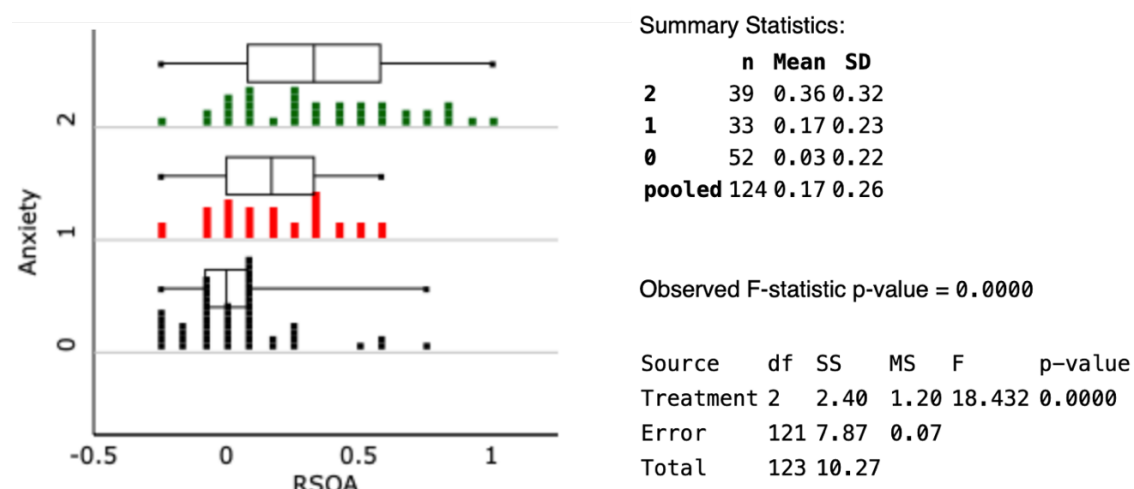


Figure 5 is a representation of the correlation between anxiety and sport devaluation for all student-athletes. Anxiety is represented as a categorical variable (normal: 0, borderline: 1, and abnormal: 2) while sport devaluation is represented as a percentage. The difference in means for this correlation has a p -value of 0.0016, indicating a significant difference between anxiety groups regarding sport devaluation for student-athletes.

Figure 5

Correlation of Anxiety and Sport Devaluation Among All Student-Athletes.

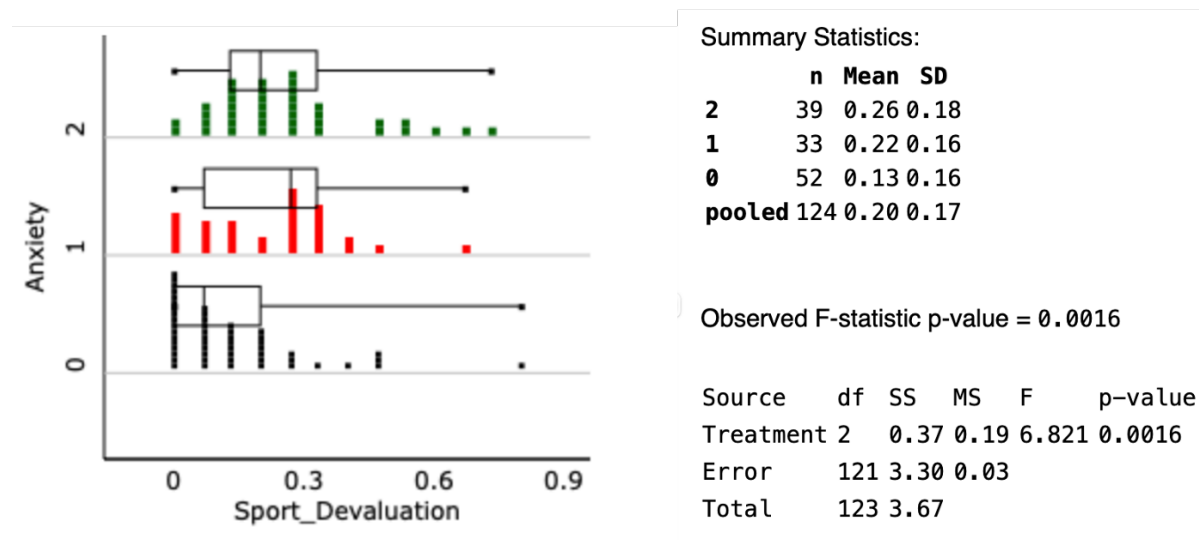
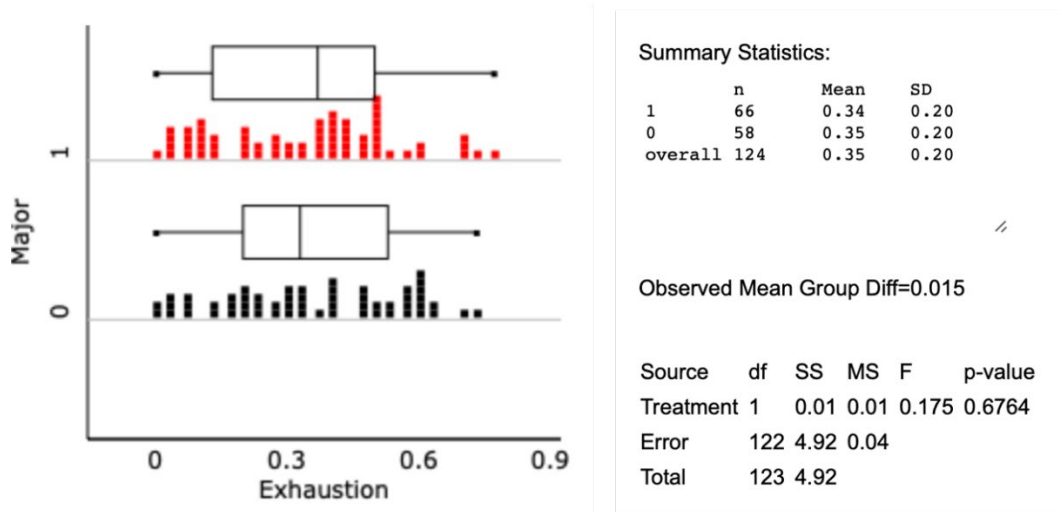


Figure 6 is a representation of the correlation between academic major and exhaustion level for all student-athletes. Academic major is represented as a categorical variable (STEM majors: 1, all other majors: 0) while sport exhaustion is represented as a percentage. The difference in means for this correlation has a p -value of 0.6764, indicating that no significant difference exists between student-athletes of a specific academic major regarding exhaustion level.

Figure 6

Correlation of Academic Major and Exhaustion Among All Student Athletes



Note: (STEM majors: 1; All other majors: 0)

Figure 7 is a representation of the correlation between depression and exhaustion for all student-athletes. Depression is represented as a categorical variable (normal: 0, borderline: 1, and abnormal: 2) while exhaustion is represented as a percentage. The difference in means for this correlation has a p -value of 0.0001, indicating a significant difference between depression groups regarding exhaustion level for student-athletes.

Figure 7

Correlation of Depression and Exhaustion Among All Student-Athletes.

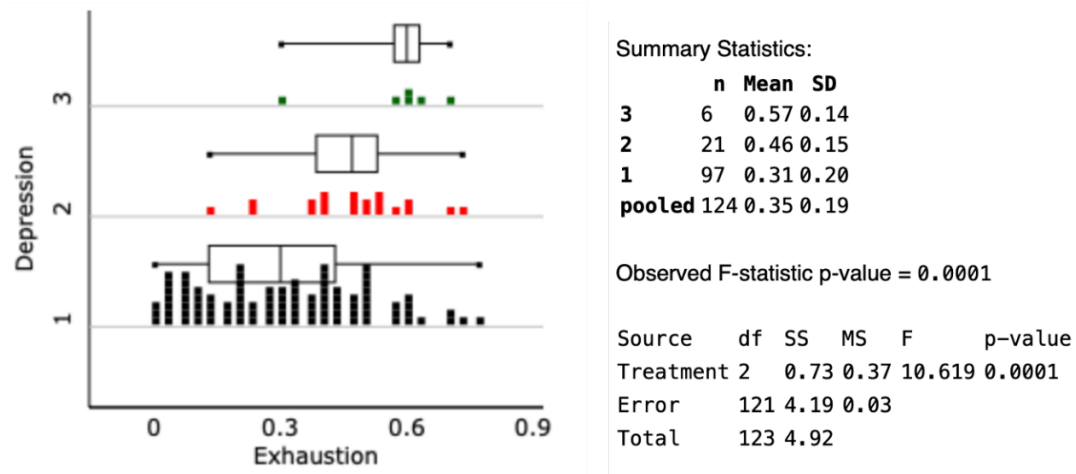


Figure 8 is a representation of the correlation between depression and a reduced sense of accomplishment (RSOA) for all student-athletes. Depression is represented as a categorical variable (normal: 0, borderline: 1, and abnormal: 2) while RSOA is represented as a percentage. The difference in means for this correlation has a p -value of 0.0001, indicating a significant difference between depression groups regarding a reduced sense of accomplishment for student-athletes.

Figure 8

Correlation of Depression and a Reduced Sense of Accomplishment Among All Student-Athletes.

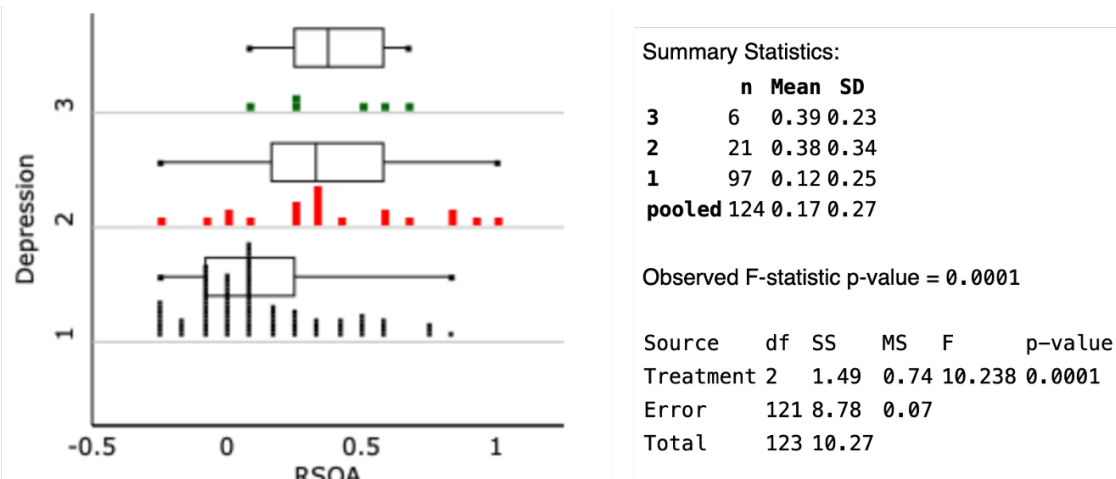
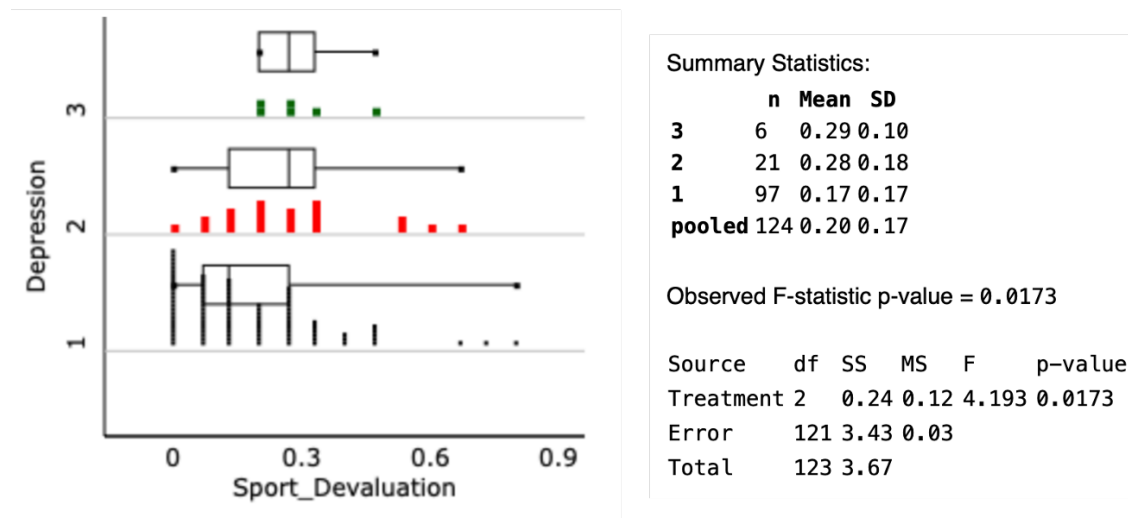


Figure 9 is a representation of the correlation between depression and sport devaluation for all student-athletes. Depression is represented as a categorical variable (normal: 0, borderline: 1, and abnormal: 2) while sport devaluation is represented as a percentage. The difference in means for this correlation has a p -value of 0.0173, indicating a significant difference between depression groups regarding sport devaluation for student-athletes.

Figure 9

Correlation of Depression and Sport Devaluation Among Student-Athletes.

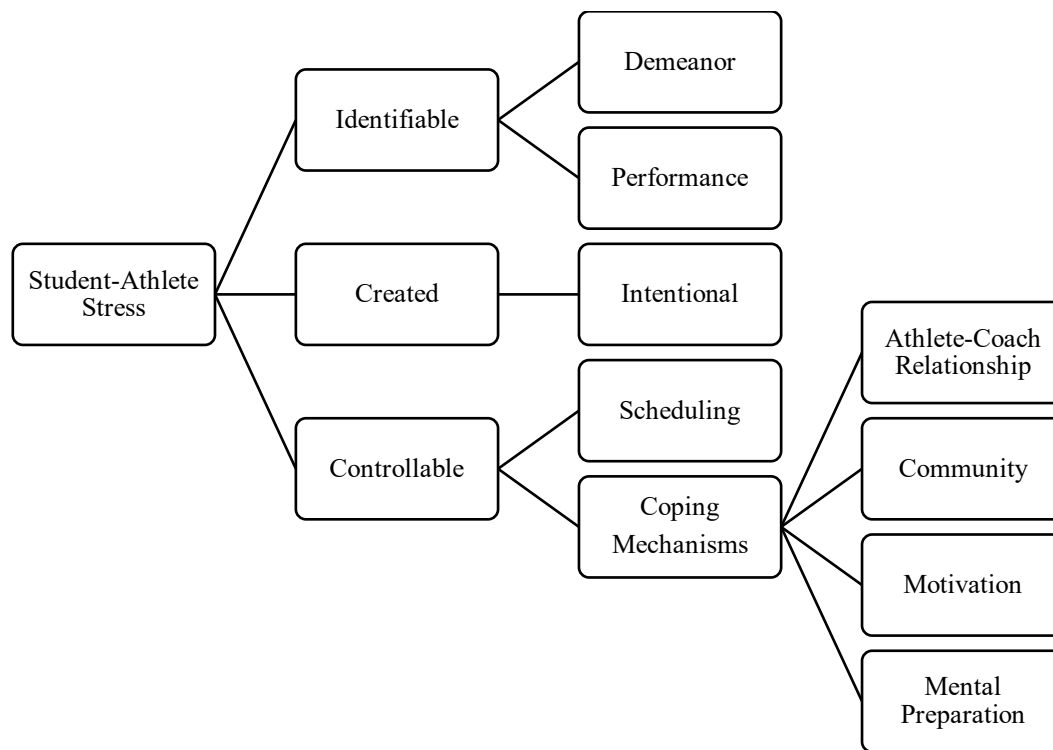


Qualitative: Coach Interviews

Interviews were conducted with four coaches that represented seven varsity sports on campus, and whose athletes participated in the initial survey. The interviews were transcribed and coded to ascertain common themes regarding coaches' awareness of student-athlete stress and possible mitigation strategies set in place for various sports. Figure 10 highlights the common themes pulled from the coaches' interviews and their relationship to student-athlete stress.

Figure 10

Hierarchical Structure of Student Athlete Stress; Causes and Coping Strategies.



All four coaches interviewed stated that athlete stress and anxiety is identifiable through both their demeanor and their performance. Coach 1 stated, “One [identifier] is just their demeanor and what kind of mood they are in when they show up for practice. The other one is how the practice goes for them” (Personal interview, February 25, 2021).

Another theme related to student-athlete stress is the idea that stress is created by the coach. Two of the four coaches admitted to intentionally creating some sort of stressful environment on the team, either in practices or in competitions. All four coaches mentioned that sports in and of themselves are inherently stressful.

Along with their awareness of their student-athletes’ stress and its sources, the coaches emphasized that this stress is controllable by both the athletes and the coaches. Three of the four coaches mentioned scheduling awareness as utmost importance for managing student-athletes’

stress. When referring to canceling practices or making schedule changes that benefit the athletes, Coach 2 stated, “I’ve got that latitude as a coach to be able to do that, but only if I’m empowered with the knowledge” (Personal interview, February 26, 2021).

Three of the four coaches interviewed also underlined the importance of developing the coach-athlete relationship. When asked how a coach can help athletes who face stress related to their sport, Coach 1 stated, “As a coach, you have to go out of your way a little bit to continually encourage [athletes] in the fact that they are doing well because it’s typically the type-A personalities who are really hard on themselves” (Personal interview, February 25, 2021).

Another aspect to managing student-athlete stress highlighted by the coaches was the idea of community. Two of the four coaches stated that part of their plan for their team is to develop community and team building to help diminish stress on the team, emphasizing ideals of “identity” and “belonging” (Coach 4, personal interview, March 2, 2021).

Three of the four coaches also mention motivation as a means of helping student-athletes cope with stress. Two of the four coaches specifically reference developing intrinsic motivation on the part of the athlete rather than depending upon extrinsic motivators. Coach 4 stated, “We try to build value on work and process and really less on results.” (Personal interview, March 2, 2021).

Finally, all four coaches mentioned the importance of mental preparation for helping student-athletes manage their stress. This mental preparation involves equipping student-athletes with knowledge for what the practice and competition schedules look like, as well as discussing aspects of competition that are both controllable and not controllable by the athletes themselves. For example, Coach 3 stated,

I think the mental preparation beforehand is a huge part of [managing stress], explaining to the team, “Okay, it is going to be a long season, this is going to be normal that you’re going to have the highs and the lows,” and just mentally walking them through that so that it is not a shock to them. (Personal interview, March 1, 2021).

Discussion

Overview of the Study

The purpose of this study was to determine effective ways in which coaches can mitigate the effects of stress for student-athletes at faith-based universities. Through surveying current student-athletes, data was collected that demonstrates levels of anxiety, depression, exhaustion, reduced sense of accomplishment, and sport devaluation that student-athletes possess. The initial aspect of the survey collected quantitative data in hopes of determining common trends among student athletes. It was hypothesized that coaching strategies of various coaches would impact the stress levels of student-athletes, therefore creating a difference in stress levels across sports. However, no significant difference was found for any variable (anxiety, depression, exhaustion, RSOA, or sport devaluation) between the sports. Similarly, no significant variance was found between student-athletes of differing grade levels or academic majors.

A significant difference was seen between genders in relation to anxiety (Figure 1). On average, participants in women’s sports scored higher than the men across all categories (Table 3). Since the coaches of several of the women’s sports teams are also coaches of the men’s teams, it appears to indicate that these differences across genders are most likely due to personality differences between genders rather than coaching practices, scheduling, or the nature of the sport. Two of three coaches interviewed who coach both a men’s and women’s sport stated that stress and anxiety is noticeably higher on the women’s side than the men. Coach 1

stated, “I would say definitely the women are generally a little bit more stressed, by both the competition and the school life” (Personal interview, February 25, 2021). This knowledge on behalf of the coaches underlines the importance for coaches to know and understand their teams, as the literature suggests that unsupportive coaching behavior has detrimental consequences for athletes, such as their perception of a situation, increased anxiety, and decreased performance (Nicholls et al., 2016).

While no significant variance was seen between various sports, the findings of this study demonstrated significant correlation between anxiety and depression and exhaustion, a reduced sense of accomplishment, and sport devaluation. Although no causal conclusions can be drawn about the relationship of these variables, it is important to note the impact of these findings for coaching student-athletes.

Levels of anxiety and depression may vary widely within any given sports team, with some athletes experiencing hardly any feelings of anxiety or depression, and others experiencing abnormal levels of both anxiety and depression. The findings of this study have demonstrated that individual athletes who do experience anxiety and depression also experience exhaustion, a reduced sense of accomplishment, and sport devaluation when it comes to their athletic performance. As such, it is crucial for athletes who are experiencing high levels of anxiety or depression to be identified so that strategies can be used to help mitigate the causes and/or effects of their anxiety and depression.

By its very nature, the student-athlete experience is stressful, with collegiate athletes feeling pressure to perform at a high standard both athletically and academically (Hamlin et al. 2019). Student-athletes face stressors in the form of coursework, study/life balance, finances, scheduling conflicts, and sport competitions. While certain stressors could be eliminated or

overcome through better time management or other such practices, many stressors are an inherent part of life and sport, both in college and beyond. Rather than attempting to eliminate all stressors that student-athletes face, coaches should try to introduce healthy coping mechanisms for their athletes to better mitigate the effects of stress and thereby increase both their athletic and academic performances.

According to Cross and Fouke (2019), very few college athletes choose majors in STEM-related fields, even though they spend a lot of time dealing with physical health and strength and understanding nutritional choices. However, this study found no significant correlation between anxiety levels of students studying in STEM-related and those who are not ($p = 0.86$). This statistic appears to demonstrate that the choice of major plays less of a role in creating stress for student-athletes as academics at Dordt University.

Identifiable

In interviews with coaches, all coaches mentioned the theme that student-athlete stress is identifiable by a variety of factors. The first is student-athlete demeanor. The way in which an athlete shows up for practice can often be a strong indicator of their mental state. Similarly, their interactions with teammates and the coaching staff may be key identifiers for stress. The second and most common way that student-athlete stress is identified is through performance.

Oftentimes, stress manifests itself in a both the practice and the competition setting. As one coach mentioned, “If [student-athletes] are stressed out about how they are going to compete, a lot of times you can see it because how they perform does not really match up with how they are practicing. With the stress of school, sometimes you can see it in the workouts: they can’t finish a workout, or they are inconsistent” (Coach 1, personal interview, February 25, 2021). This insight on the part of the coaches is also reflected in the survey data. Students who scored high

for anxiety and depression also reported exhaustion and sport devaluation (see Figures 3, 5, 7 and 9).

Created

The second theme of student-athlete stress that coaches highlighted is the fact that this stress is created by the coaches themselves, often intentionally. For example, in some sports, the competition roster is limited to a certain number of athletes. Because of this, athletes are forced to compete against one another for spots on the roster. This intra-team competition can cause stress for athletes, as their position on the team is not guaranteed. However, coaches are aware of this stress, and depend upon it to motivate their athletes and thereby raise the level of competition on the team. Other coaches create stress on their team for different reasons. Coach 2 stated, “I create stress through [our sport]. I put practice plans together that are stressful because I want them to be tested in practice so that the competition feels comfortable” (Personal interview, February 26, 2021). Coaches are aware that competitions are inherently stressful. To adequately prepare their athletes for the stress of competition, coaches introduce stress in a more controlled, practice environment.

Controllable

The final theme of student-athlete stress that arose in coaches’ interviews was the idea that this stress is controllable, both by the coach and the student-athlete. Coaches can control student-athlete stress by the way in which they choose to schedule practices. Oftentimes, scheduling conflicts and time commitments are significant contributors to student-athlete stress (Parker et al., 2018). For this reason, coaches can help control the level of stress that athletes face by controlling the way in which practices are scheduled. As Coach 1 said, “I think scheduling practices and so forth in a way that does not cause them stress in their life. Sometimes that can be

the time you practice; sometimes it can be how long practice is” (Personal interview, February 25, 2021). Being aware of student-athletes’ other commitments can also help coaches make decisions regarding when and how long to practice. Other coaches mentioned that sometimes they use their prerogative to cancel or restructure practice when athletes seem fatigued, burnt-out, or stressed.

The second way in which student-athlete stress is controllable is through a variety of coping mechanisms. One coping mechanism that many coaches emphasized in their interviews was the importance of the coach-athlete relationship. According to Nicholls et al. (2016), “The importance of the coach–athlete relationship should not be underestimated, given that successful coach–athlete relationships can result in superior coaching, coach and athlete well-being, and better self-concept.” As such, it is crucial that coaches foster meaningful relationships with their athletes. Coach 4 emphasized the importance of creating a safe space for athletes through relationship building: “I think that people who deal with anxiety need to have a place where they can go that provides them no anxiety. I hope that I am that person for them...that when they get done talking to me, they are less anxious than they were before” (Personal interview, March 2, 2021). Evident in interviews with coaches is the idea that the coach-athlete relationship plays a central role in mitigating the stress that student-athletes face.

Another aspect to helping students-athletes cope with the stress that they face is building a sense of community. Developing a safe community for student-athletes is important for helping them recognize that they do not have to manage their stress on their own. One of the coaches interviewed mentioned that he attempts to develop community on his team by utilizing prayer groups. This allows his athletes to recognize that they are not only part of a team community, but

also part of a larger faith community. Other coaches mentioned that they believe the community aspect of their sport allows it to be a positive outlet for them in dealing with stress and anxiety.

One of the most crucial aspects of helping student-athletes cope with the stress of athletics and academics is through a development of their motivation. According to Chiou et al. (2020), “It was found that those athletes who engage in sports purely for the intrinsic reasons such as fun and enjoyment are working hard during seasons, which subsequently predicted their end-season goal attainments.” In other words, a high level of intrinsic motivation is a key indicator of future success in each sport. This idea was confirmed in an interview with Coach 1, who stated:

Really, you want the motivation to come from the athlete and not from you, and I think there are a number of ways that as a coach you try to give athletes ownership to what they’re doing in the sport. If you don’t do that, it is way more stressful for them, like if there is a lot of pressure on them to perform, or if they feel like they have to do a certain thing in order to make coach happy. (Personal interview, February 25, 2021).

Athletes with high personal standards for themselves tend to have greater levels of mental toughness as well as self-determined motivation (Cowden et al. 2019). For this reason, it is important for some of the stress that student-athletes face to be mitigated, as stress and anxiety has a direct correlation with a reduced sense of accomplishment (Figure 4). A reduced sense of accomplishment is associated with negative evaluations of oneself regarding sport performance. Therefore, stress and anxiety lead to a reduced sense of accomplishment, which in turn diminishes one’s view of oneself, thereby decreasing overall performance.

The final coping skill that coaches can help instill in their student-athletes is that of mental preparation. One important aspect of mental preparation is assisting student-athletes in

understanding their role in controlling the outcomes of their performances. According to Nicholls et al. (2016), athletes who can distinguish between stressors that are controllable-by-self vs. controllable-by-others are more adept at coping with stress in a healthy manner. This idea of helping students identify stressors that can be controlled vs. not controlled was further explained by Coach 4:

We might get sick the day before the [competition]. Well, we could have done everything right, and that's out of our control. Or somebody else can have the best [performance] of their entire life. You might be the best...and just on that day, you're second best because that person had the [performance] of their life. And that's again, out of our control.

(Personal interview, March 2, 2021).

Giving student-athletes a sense of control aides in developing intrinsic motivation on their part. Mental preparation is a key component of helping student-athletes understand their role in controlling the process of training and working hard instead of the outcomes of performances. These findings align with those of Parker et al. (2018) who found that attribution-theory of motivation is helpful for student-athletes to understand their locus of control in the context of both academics and athletics. Student-athletes who begin to value the process of athletics rather than the outcomes are more likely to have a higher sense of sport valuation and sense of accomplishment.

Throughout the interviews with the coaching staff, many mentioned their motivations for wanting to assist student-athletes learn how to cope with the stress that they face. Many coaches recognize that stress is an inherent component of life, and it is not something that they can shelter their student-athletes from. Certain research suggests that coaches can help alleviate stress and anxiety by introducing certain lifestyle concepts such as “deep breathing techniques, positive

self-talk, and developing healthy sleep habits” (Lopes Dos Santos et al., 2020). However, the coaches interviewed appear to implement coping strategies that go beyond mindfulness techniques and that have life-long impacts on their athletes. As Coach 1 stated,

It is important to teach [athletes] a coping skill because the sport is a microcosm of life. So, if it causes a lot of anxiety, if they never can meet their own standard, it is usually something that happens in other parts of their life also. It is really a process of helping them learn to have that drive, but also to be content with the result, even if the result is not perfection because that rarely happens. (Personal interview, February 25, 2021).

Coach 2 echoed many of these same sentiments:

I think one of the things I, as a coach, want to be careful is not to keep stress from my athletes, but to help them manage it as well as they can....I’ve told student-athletes in the past, “Your safety and health is more important than a singular sport moment, than a practice, a [competition], or a season....I care about you more than I care about your performance on the court, and I’m a coach here, so I really do care about your performance.” (Personal interview, February 26, 2021).

Ultimately, the goal of many coaches at this faith-based institution was to help their student-athletes develop life-long skills that will equip them to succeed beyond the realm of their sport. This seems to resonate with the athletic department’s mission of “equipping student-athletes to be servant leaders” (Dordt University, 2020). Based on the interviews with coaches, it appears that most coaches are aware to some extent the levels of anxiety and depression on their respective teams and are actively striving to mitigate the effects they can have on the performances and lives of their student athletes.

Summary

Due to the negative impact that stress and anxiety have on the athletic performances of student-athletes, it is imperative that student-athletes who experience high levels of anxiety and/or depression be identified. One way that this study found in which identification can take place is by strengthening the coach-athlete relationship. The coach-athlete relationship also serves as a crucial foundation for introducing coping strategies for student-athletes facing stress. Coaches can assist their athletes in developing skills such as stress identification, understanding locus of control, and mental preparation—all of which are key components in helping student-athletes understand their role in controlling the stress they face from both athletics and academics.

Limitations of the Study

Due to the way in which the survey was administered to the student-athletes, only correlational conclusions can be drawn from the data rather than causational. Student-athletes were given the option to opt-in to this survey, and as such no randomization was set into place for gathering responses. Similarly, there is no way to know if those who are more likely to volunteer to fill out a survey are also those of a type-A personality and exhibit tendencies towards stress and anxiety. Furthermore, it is possible that the coaches' perceptions of their mitigation strategies and effects on the team differ than reality, as no constraints were set into place to test the validity of all claims made by the coaching staff.

Considerations for Future Study

This study was conducted at a singular, discrete point in student-athletes' academic and athletic years. As such, further studies that examine how anxiety and depression levels fluctuate among student-athlete populations could provide additional insight into the stress levels of

student-athletes across campus. Similarly, this study focused primarily on student-athlete stress and its negative effects on athletic performance. However, no questions were included in the survey that considered the potential benefits of athletic performance in helping to control student-athlete stress. An additional survey including questions that relate to an athlete's positive relationship with their sport could provide further information on how sport contributes or helps to control stress. Finally, this study was based on the premise that the coach-athlete relationship is crucial for helping reduce stress in student-athletes (Nicholls et al., 2016). However, student-athletes were not given any questions regarding their perceptions of their relationships with their coaches, which could also provide added perspectives into gauging the effectiveness of the coaches' strategies for mitigating student-athlete stress.

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Appendices

APPENDIX A – Athlete Survey

Athlete profile questions 1 - 6

1. Gender (Male/Female)
2. Sport
3. Year in School (1, 2, 3, 4+)
4. Academic Major(s)?
5. Is your sport currently in-season or out-of-season?
6. Have you ever been diagnosed with anxiety or depression by a medical professional?

HADS questions 7 – 20 (questions ranked on a scale of 1 – 4)

7. I feel tense or “wound up”
8. I still enjoy the things I used to enjoy
9. I get a sort of frightened feeling as if something awful is about to happen
10. I can laugh and see the funny side of things
11. Worrying thoughts go through my mind
12. I feel cheerful
13. I can sit at ease and feel relaxed
14. I feel as if I am slowed down
15. I get a sort of frightened feeling like “butterflies” in the stomach
16. I have lost interest in my appearance
17. I feel restless as I have to be on the move
18. I look forward with enjoyment to things
19. I get sudden feelings of panic

20. I can enjoy a good book, podcast, or TV program

ABOS questions 21 – 40 (questions ranked on a scale of 1 – 4)

21. I am not performing up to my abilities

22. I feel that my batteries are flat

23. I feel exasperated

24. Efforts I provide would be better used doing something else

25. I am unable to achieve good performances

26. I lack energy

27. I feel wearied

28. My performances leave me indifferent

29. I feel incompetent

30. I feel physically drained

31. I feel frazzled

32. I do not really care about my performances

33. I feel successful

34. I feel physically exhausted

35. I hardly think quickly

36. I have negative feelings toward my sport

37. It seems to me that whatever I do, I'm failing

38. I feel physically weak

39. I find it hard to concentrate

40. I feel loathing toward my sport

APPENDIX B - Coach Interview

Initial questions:

1. What sport do you coach?
2. Do you coach primarily males or females?

Stress & Anxiety questions:

3. Would you describe any of your athletes as being stressed, anxious, or burnt out?
 - a. If so, what approximate percentage of your team?
 - b. If so, what characteristics help you identify stressed or anxious athletes?
4. Do you believe that your athletes experience stress & anxiety as a result of their participation in sports, their academic performance, or a combination?
5. Do you believe there are ways that coaches can help diminish the stress that student-athletes face?
6. Are there any specific strategies that you have implemented to help mitigate the effects of stress (either athletic or academic) on your student-athletes?

APPENDIX C – Email to Student-Athletes

Hello all! I am asking you to participate in a research study titled *Stress Management for Student-Athletes*. I will describe this study to you and answer any of your questions. This study is being led by myself, Caleb Herman, a graduate student, and assistant coach at Dordt University. The Faculty Advisor for this study is Dr. Pat Kornelis, who is part of the Education Department at Dordt University.

Purpose of this study:

The purpose of this study is to determine effective ways in which coaches can mitigate stress for student-athletes at faith-based universities.

What we will ask you to do:

All I ask of you is to complete the below survey by clicking on the link. You may be asked to log into your Google account to complete the survey. This is only to ensure that the survey is completed only one time by each individual; your Google account information will not be recorded. If you do not already have access to Google apps, you can log in to Google with your Dordt username followed by "@dordt.edu" and your Dordt password. For more information click on this link: <https://u.dordt.edu/dordt/computer-services/help-guides/google-apps>

The survey should take approximately five to ten minutes. Your responses are anonymous and will be pooled with the other responses and used for research purposes only. Please follow the instructions of the survey, answer all the questions honestly, and remember to press submit when you are finished.

Risks and Discomforts:

Please note that the survey is being collected online on Google Forms, a company not affiliated with Dordt and with its own privacy and security policies that you can find at its website. We

anticipate that your participation in this survey presents no greater risk than everyday use of the Internet. Please be aware that some individuals could experience emotional effects such as sadness or anxiety.

Benefits:

There may be possible indirect benefits from completing this research survey such as reflecting on your own mental health and its relation to your academic and athletic involvement. In addition, others may benefit from the findings of this research study.

Compensation: Participants will not receive any compensation.

Privacy/Confidentiality/Data Security:

I will not be collecting any identifying information; your responses are anonymous and will be used as combined data for research purposes only. In addition, the answers to the surveys will be kept secure in an electronic environment protected by a password. Please note that email communication is neither private nor secure. Though I am taking precautions to protect your privacy, you should be aware that information sent through e-mail could be read by a third party.

Taking Part in this Study:

If you feel uncomfortable with these conditions you may choose not to participate. Participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled.

Please click on the link below to go to the survey. Completion of the survey is an indication of your willingness to participate in the study. **Please complete this survey by Jan. 30.**